"The Big 6"

Livestock Grazing Analysis

Resource Report for

Rangeland Vegetation

on

Little Horn Watershed Allotments
Medicine Wheel Paintrock District

Fisher Mountain C&H
Little Horn C&H
Red Springs C&H
Sage Basin C&H
Wyoming Gulch C&H

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Introduction and Overview

This discussion addresses Rangeland Vegetation within the Little Horn Watershed. It describes the affected environment and environmental consequences of alternatives to the proposed action relative to issues that have been developed as described in detail in Chapter 1. Issues identified as key and non-key will be used to compare the effects of the actions for each alternative.

This Rangeland Vegetation Specialist Report will discuss the affected environment and identify effects of actions to 3) Riparian vegetation and 4) Upland vegetation.

The remaining key and non-key issues are addressed in Wildlife, Economics, Aquatics, Livestock Grazing, and Invasive Species Specialist Reports and project files.

This report is arranged to describe the affected environment and environmental consequences that apply to all allotments in the described area (Watershed-wide) and those that apply to specific allotments only (Allotment specific).

Affected environment descriptions and effects analysis was arrived at through review of Medicine Wheel Paintrock Ranger District (MWPRRD) 2210, 2230, and 2240 files, review of the Revised Forest Plan, and other handbook, manual, and internal reference material, along with personal experience of the authors. The analysis included review of livestock grazing reference material from the early 1900's, but focused primarily on the past 20 years. Spatial context was the project area, with the exception of cumulative effects.

Table 3-1 lists Connected Actions, Past, Present, and Foreseeable Activities Relevant to Cumulative Effects Analysis.

Each alternative that will be analyzed in detail is described in Chapter 1, and summarized below.

Alternative 1: No Action: No domestic livestock grazing would be permitted. Improvements not needed for other resource uses would eventually be removed as time and funding allows.

Alternative 2: Livestock Grazing with Current Management: Livestock grazing would continue as prescribed under the current allotment management plans (AMPs) or, in the absence of such a plan, under the annual operating instructions (AOIs). Existing improvements would be maintained and would be reconstructed as needed. New improvements not currently authorized under a NEPA decision would not be developed without further NEPA analysis and decision. Previous NEPA decisions for vegetative treatment through use of prescribed fire would remain in effect.

Alternative 3, Proposed Action: Continuation of livestock grazing under this alternative will use adaptive management to focus on the end results for the resource. Prescribed fire is proposed to occur across part of watershed above and beyond that under previous NEPA.

Affected Environment: Little Horn *Watershed-wide*
Medicine Wheel Paintrock District
Riparian and Upland Vegetation, Issues 3 and 4

The Fisher Mountain C&H, Little Horn C&H, Red Springs C&H, Sage Basin C&H and Wyoming Gulch C&H Allotments are located on the east slope of the Bighorn National Forest. They are lands that include strong representation by herbaceous and graminoid species. Rangelands include, but are not limited to: grasslands, forblands, shrublands, open-canopied forests, and associated riparian, wetland and aquatic areas. Well-managed rangelands provide forage and cover for wildlife and domestic livestock, in addition to high quality water and numerous recreational values.

The project area is dominated by upland species such as Idaho fescue (*Festuca idahoensis*). Plant communities dominated by Willow (Salix sp.) and Sedges (Carex sp.) are common in riparian areas. Sagebrush is common within much of the project area, particularly mid and lower elevations. Conifer encroachment into rangeland is common. Sagebrush and conifer encroachment reduces available forage and habitat for livestock and wildlife, and affects biodiversity. Treatment throughout the watersheds is proposed and on-going, based largely on the need to maintain rangeland vegetation for livestock grazing.

The project area has been and continues to be grazed by wild ungulates (Elk, Mule deer, Moose). Effects observed include grazing and browsing on aspen, riparian, and wetland vegetation. In the project area some observations have been made of excessive browsing of aspen and willow, most likely by a combination of elk, moose, and cattle. Long-term effects can be reductions in vigor or reproductive ability of these plants and changes in species and plant community composition and cover.

The Little Horn C&H, Red Springs, Sage Basin and Wyoming Gulch Allotments are currently grazed by cattle and the Fisher Mountain allotment is currently grazed by horses (Specialist Report for Livestock Grazing). Grazing has occurred in these areas since the late 1800's. Effects on rangeland vegetation from livestock can be similar to those of wildlife. While some effects are considered acceptable and/or desirable (such as moderate grazing and a diversity of seral stages), in some areas impacts can be concentrated, sometimes affecting the same areas year to year, with undesirable results (such as trailing, erosion, or willow suppression). Such evidence of livestock grazing (permitted cattle or horse, or possibly not-permitted recreation horse) or wildlife grazing is evident.

The Forest Service implements management of rangelands through avenues such as administration of term grazing permits, coordination of wildlife populations and habitat through the Wyoming Game and Fish Department, vehicular use impacts through travel management, conifer and shrub encroachment through prescribed fire or chemical treatments, and fuels management through fire or removal of wood products.

An update of Rangeland Suitability analysis for allotments in the project area was completed (Attachment A). Desired conditions have been described for the Rangeland Vegetation resource at the Forest Plan scale, they were refined for this project area, and site specific benchmark desired conditions have been described for each allotment (Desired Condition Supplement 1-2 and Table 1-2 Desired conditions and Benchmark Sites and Photo Point Trend). Determinations have been made as to whether current conditions are meeting or moving toward desired

conditions at the Benchmark scale (Table 3, Key Areas and Benchmark Sites). All are described in this report on an allotment by allotment basis, as follows.

Affected Environment: Little Horn Watershed *Allotment Specific Medicine Wheel Paintrock District*

Riparian and Upland Vegetation, Issues 3 and 4

Fisher Mountain C&H

Fisher Mountain C&H is a low to mid elevation (4,500 – 7,400 feet) allotment encompassing 1,775 acres of the project area. It consists of two upland meadows surrounded by dense stands of timber. Wildfire in 2003 burned much of the timber and uplands, but conifer encroachment is still an issue on this allotment.. The 2009 updated Rangeland Suitability analysis for Fisher Mountain C&H allotment indicated that only 159 acres are suitable for livestock grazing (Attachment A). Of those acres found to be Suitable, an estimated 70 acres were determined to be riparian, and the remainder is assumed to be upland vegetation. Rangeland vegetation on upland and riparian sites is considered meeting or moving toward desired conditions.

Little Horn C&H

Little Horn C&H is a low to high elevation (4,500 – 9,800 feet) allotment, encompassing 13,380 acres of the project area. The allotment is primarily grassland interspersed by large stands of aspen and spruce. Wildfire in 2003 occurred across approximately 18% of the allotment. Prescribed burns are planned in the Little Horn C&H Allotment through the Little Horn Prescribed Fire Burn Plan. The 2009 updated Rangeland Suitability analysis indicated that 3,894 acres are suitable for livestock grazing, which includes 469 acres of the East Burnt and Parks pastures (Attachment A). Of those acres found to be Suitable, an estimated 1,147 acres were determined to be riparian, and the remainder is assumed to be upland vegetation.

Rangeland Vegetation on upland and riparian sites is not considered meeting or moving toward desired conditions on three of the riparian sites and one of the upland sites. The remaining Benchmark sites are considered to be meeting or moving toward desired conditions. Conifer encroachment has been noted in some areas, but is not widespread. There are areas of sagebrush on the allotment. One burn unit is planned within this allotment as part of the 2001 Little Bighorn Prescribed Fire decision.

Red Springs C&H

Red Springs C&H is a low to high elevation (4,700 – 9,600 feet) allotment, encompassing 24,448 acres of the project area. The allotment consists of ridges and gentle slopes of the upper headwaters of the West Fork of the Little Bighorn River to other portions of the allotment such as Deer Basin and the Face. Wildfire and subsequent salvage timber sales in the last 40 years has occurred across approximately 30% of the allotment. The 2009 updated Rangeland Suitability analysis for Red Springs C&H allotment indicated that 4519 acres are suitable for livestock grazing (Attachment A). Of those acres found to be Suitable, an estimated 1,003 acres were determined to be riparian, and the remainder is assumed to be upland vegetation.

Rangeland Vegetation on upland and riparian sites is not considered meeting or moving toward desired conditions on four of the riparian sites and one of the upland sites. The remaining Benchmark sites are considered to be meeting or moving toward desired conditions. Conifer encroachment has been noted in some areas, but is not widespread. There are few areas of sagebrush. A portion of this allotment burned in the 2003 Little Horn II fire.

Sage Basin C&H

Sage Basin C&H is a low to high elevation (4,900 – 9,000 feet) allotment encompassing 7,391 acres of the project area. Wildfire in 2003 occurred across approximately 15% of the allotment. Subsequent salvage timber sales and additional logging activity occurred on the allotment in the eighty's and ninety's. The majority of the suitable range is on Boyd Ridge which is a long plateau-like ridge bordered by steep canyons of the Little Bighorn River and the West Fork of the Little Bighorn River. The 2009 updated Rangeland Suitability analysis for Sage Basin C&H allotment indicated that 1,364 acres are suitable for livestock grazing (Attachment A). Of those acres found to be Suitable, an estimated 265 acres were determined to be riparian, and the remainder is assumed to be upland vegetation.

Benchmark sites indicate Rangeland Vegetation on upland and riparian sites is meeting or moving toward desired conditions. Conifer encroachment has been noted in some areas, but is not widespread. There are areas of sagebrush. A portion of this allotment burned in the 2003 Little Horn II fire, and two burn units are planned within this allotment as part of the 2001 Little Bighorn Prescribed Fire decision.

Wyoming Gulch C&H

Wyoming Gulch C&H is a moderately high elevation (8,200 – 9,600 feet) allotment, encompassing 8,311 acres of the project area. Riparian habitat is interspersed throughout the allotment including along the Little Bighorn River, Half Ounce Creek, and various other creeks in the three pastures of the allotment. Wildfire and subsequent salvage timber sales in the seventy's occurred across approximately 10% of the allotment. Historic mining activity on the allotment altered stream channels and vegetation in the Half Ounce meadows. The 2009 updated Rangeland Suitability analysis for Wyoming Gulch C&H allotment indicated that 4393 acres are suitable for livestock grazing (Attachment A). Of those acres found to be Suitable, an estimated 1,499 acres were determined to be riparian, and the remainder is assumed to be upland vegetation.

Benchmark sites indicate Rangeland Vegetation on upland and riparian sites is meeting or moving toward desired conditions Conifer encroachment has been noted in some areas, but not widespread. There are few areas of sagebrush.

Environmental Consequences: Little Horn *Watershed-wide Medicine Wheel Paintrock District*

Issues 3) Riparian vegetation and 4) Upland vegetation Watershed-wide

Alternative 1 No action no grazing: Direct, Indirect, and cumulative effects:

-Livestock effects to areas of upland and riparian rangeland vegetation (through grazing and browsing on aspen, riparian, and upland vegetation, as well as physical impacts to soil) would no longer occur. In most areas there is no clear separation between effects of livestock and those of wild ungulates, so the changes likely to occur from livestock removal are one of degrees rather than total cessation of all grazing effects. There would likely be some change in reproductive ability of plants and vigor, as well as in species composition, plant community composition, and cover.

-Long-term trend of rangeland vegetation on a landscape scale would likely be toward later seral plant communities, with the exception of small isolated pockets of vegetation where wild ungulate impacts continue to repeatedly occur. Most benchmark sites would be expected to show a trend toward desired conditions.

-Eventually on many sites (dependent upon a wide variety of variables such as time, precipitation, degree of wildlife impacts, site potential, etc) species composition is likely to become less diverse.

-Although elk and deer will continue to use rangeland, excess forage will not be removed annually by livestock, and will accumulate, particularly in areas of high production. The risk of occurrence and rate of spread of wildfire would increase as a result of accumulation of fine fuels.

-In many areas, long-term removal of domestic livestock from rangelands may result in a decrease in species diversity in the plant community where those plant communities are disturbance regime dependent (such as grasslands or many shrublands).

Alternative 2 Current Management: Direct, Indirect, and cumulative effects:

-Livestock effects to areas of upland and riparian rangeland vegetation (through grazing and browsing on aspen, riparian, and upland vegetation, as well as physical impacts to soil) would continue to occur in a manner similar to recent historic patterns and at levels consistent with the revised Bighorn Forest Plan guidelines for forage use.

-Impacts to soil and vegetation by permitted livestock (localized soil compaction, streambank alteration, plant defoliation) would continue to occur within parameters described in the Forest Plan.

-Assuming that stocking levels and seasons of use remain within recent historical levels, reproductive ability of plants and vigor will be maintained, as well as in species, plant community composition, and cover.

-Long-term trend of rangeland vegetation on a landscape scale would likely be toward later seral plant communities with the exception of small isolated pockets where livestock may congregate, or areas of vegetation where wild ungulate impacts continue to repeatedly occur.

-Benchmark sites would be expected to show a trend toward desired conditions, but more slowly than in alternatives 1 and 3.

-Sagebrush treatment and conifer encroachment to maintain rangeland vegetation would continue in accordance with completed NEPA analysis.

Alternative 3 Adaptive management: Direct, Indirect, and cumulative effects:

-Livestock effects to areas of upland and riparian rangeland vegetation (through grazing and browsing on aspen, riparian, and upland vegetation, as well as physical impacts to soil) would occur although to a lesser degree than under Alternative 2. Impacts would be limited to more specific time frames and locales as a result of improvements in controlling livestock distribution.

-Impacts to soil and vegetation by permitted livestock (localized soil compaction, streambank alteration, plant defoliation) would continue to occur within parameters described in the Forest Plan. These effects would be reduced where adaptive improvements have been proposed as part of alternative 3.

-Alternative three would provide additional water points and drift fences. Flexibility to control livestock impacts would be greater than alternative two. Plants would have an increased opportunity to recover from grazing impacts, and different plants would be grazed by livestock year-to-year, different times. Plant reproductive ability and vigor would continue to improve in many areas, and planned changes in species, plant community composition, and cover would occur more rapidly that under alternative 2.

-Long-term trend of rangeland vegetation on a landscape scale would likely be toward later seral plant communities, with the exception of small isolated pockets of vegetation where wild ungulate impacts would continue to repeatedly occur, or in areas where other activities or impacts are the key factors (conifer encroachment, sage density increase, OHV impacts, etc.).

-Benchmark sites not currently considered to be meeting or moving toward desired conditions would be expected to show a more rapid trend toward desired conditions than under Alternative 2.

-Sagebrush and conifer encroachment would continue to be reduced which will increase and maintain forage production and availability for ungulate species as well as other wildlife.

Cumulative Effects:

The activities listed in Table #3-1 (attached) were considered in the cumulative effects analysis for Rangeland Vegetation. The Allotment boundaries and adjacent allotments were considered in this analysis over the time frame that livestock have been authorized on the Forest (1906 to present).

Alternatives 1, 2, and 3

Historic uses continue to be evident in rangeland vegetation today. For example, some areas are continuing to recover from impacts of heavy livestock grazing, trailing, and mining that occurred in the early 1900's. Riparian areas altered by historic mining events also continue to recover, and likely would under all three alternatives.

Fire suppression activities in the past have resulted in conifer encroachment in many areas, which in turn reduce total acres of rangeland vegetation, as well as forage production and availability. The encroachment may also be reducing the amount of water that filters through the watershed and reaches rangeland vegetation sites, possibly contributing to the drying of these sites, and shifting species composition in some riparian areas. Roads and trails can also channel water and influence a shifting species composition.

Under action alternatives 2 and 3 there would continue to be conflicts about the effects of livestock and wildlife activities, such as willow browse and grazing levels. There would also continue to be effects by livestock due to wildfire and prescribed fire management, and there may be conflicts between livestock grazing and recreation activities that result in bare soils and spread of invasive species.

Under action alternatives 2 and 3 sagebrush treatment and conifer encroachment treatment efforts would continue on all allotments where it is considered necessary in an effort to maintain rangeland vegetation in accordance with completed NEPA analysis.

Expectations are that under all three alternatives the impact of human activities to rangeland vegetation would increase as the population of local communities increases, 'baby-boomers' retire, and as more people nationwide continue to seek places to recreate.

Implementation of adaptive management described in alternative 3 would likely result in less of a cumulative effect to rangeland vegetation than alternative one or two.

Environmental Consequences: *Allotment Specific*

Issues 3) Riparian vegetation and 4) Upland vegetation

Fisher Mountain C&H Allotment

Alternatives 1, 2, and 3:

-No direct, indirect, or cumulative effects have been identified beyond those described allotment-wide.

Little Horn C&H Allotment

Alternatives 1and 2:

-No direct, indirect, or cumulative effects have been identified beyond those described allotment-wide.

Alternative 3: Proposed action with Adaptive Management:

-The administrative act of moving the allotment boundaries as proposed would have no effect to rangeland vegetation in alternative 2 or 3.

-The change in AUMs would be expected to show a more rapid trend toward desired conditions for Benchmark sites than under Alternative 2

Red Springs C&H Allotment

Alternatives 1and 2:

-No direct, indirect, or cumulative effects have been identified beyond those described allotment-wide.

Alternative 3: Proposed action with Adaptive Management:

-The change in AUMs would be expected to show a more rapid trend toward desired conditions for Benchmark sites than under Alternative 2.

Sage Basin C&H Allotment

Alternatives 1, 2, and 3:

-No direct, indirect, or cumulative effects have been identified beyond those described allotment-wide.

Wyoming Gulch C&H Allotment

Alternatives 1, 2, and 3:

-No direct, indirect, or cumulative effects have been identified beyond those described allotment-wide.

Compliance with Forest Plan and Other Relevant Laws, Regulations, Policies and Plans

Desired conditions for Upland and Riparian Rangeland Vegetation would be met under all three alternatives analyzed in detail.

Monitoring Recommendations

None other than specified in Chapter 1 and Chapter 2 of DEIS.

References

-Bighorn National Forest Land and Resources Management Plan, Revised 2005
-Bighorn National Forest Vegetation Grazing Guidelines (USDA Forest Service, Revised 2007)
-Attachment A, Rangeland Suitability analysis for Medicine Wheel Paintrock District Little Horn Watershed Allotments
-Supplement 1-2, Desired Condition for the "Big Six" Project Area
-Table 1-2, Desired Conditions and Benchmark Sites
-Table 3, Key Areas and Benchmark Sites
-Specialist Report for Livestock Grazing for Little Horn Watershed Allotments Medicine Wheel Paintrock District
-Rangeland Analysis and Management Training Guide, Region 2, USDA Forest Service 1996
-Wyoming Rangeland Monitoring Guide, 2008
-2210 Files, Medicine Wheel Paintrock Ranger District, Bighorn National Forest, USDA Forest Service